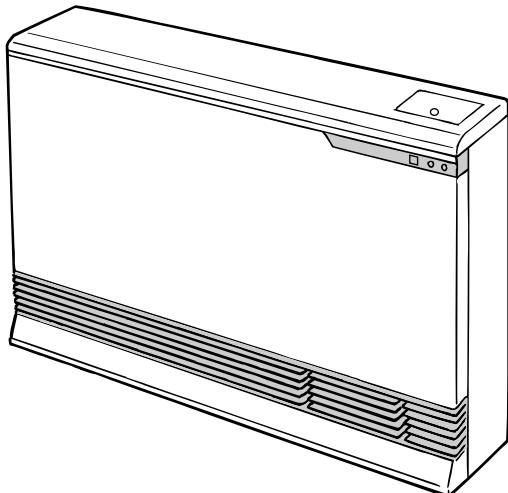


Rinnai

Installation and User Manual

RHFE-1004T



Energysaver® Space Heater

Important.

Read these instructions carefully before attempting installation or use of this appliance. All work must be carried out by competent persons.

Rinnai Corporation - Japan



ISO 9001
JIS Q 9001



ISO 9001
APPROVED BY JIA

Manufactured under a
Quality System Certified
as complying with ISO
9001 by an Accredited
Certification Body.

CE

CONTENTS

Features of your 1004T	2
Getting to know your New 1004T	3
Control Panel Layout	4
Important Points	5

Customers Operating Information

How to operate the Heater	7
Adjusting Temperature.....	8
Economy Mode.....	8
Function Lock	9
Other Operating Information.....	10

Installation

Location	11
Installation Instructions	14
Making Electrical Connection	15
Wiring Diagram for Programmer	16
Summary of Position for Terminal	17
Installation Instructions	18
Using the Template	19
Sleeve and Manifold Installation	20
Fitting Unit	21
Forced Flue Heater Extension Kits	24
Testing	29
Gas Pressure Setting Procedure.....	30
Gas Conversion Procedure	31
Care of your 1004T	32
Pre-service Check	33
Error Messages	34
Safety Devices	35

Product Specifications

Dimensions	36
Wiring Diagram	37
Warranty	38
Specifications	39
Service Contact Points	39

FEATURES OF YOUR 1004T

Push Button Ignition: Only one touch of the ON/OFF button is required to operate the heater.

7 Step Automatic Heat Control with electronic thermostat. The fan is also controlled by the thermostat.

Economy Mode: An energy saving feature that reduces the room temperature by 3°C over a 90 minute period.

Lockable Control Panel Lid: The 1004T has a lockable Control Panel Lid which is ideal for commercial use. This feature is great for applications where safety is paramount or when the unit is required to be set once and left alone. Two keys are also supplied with the unit.

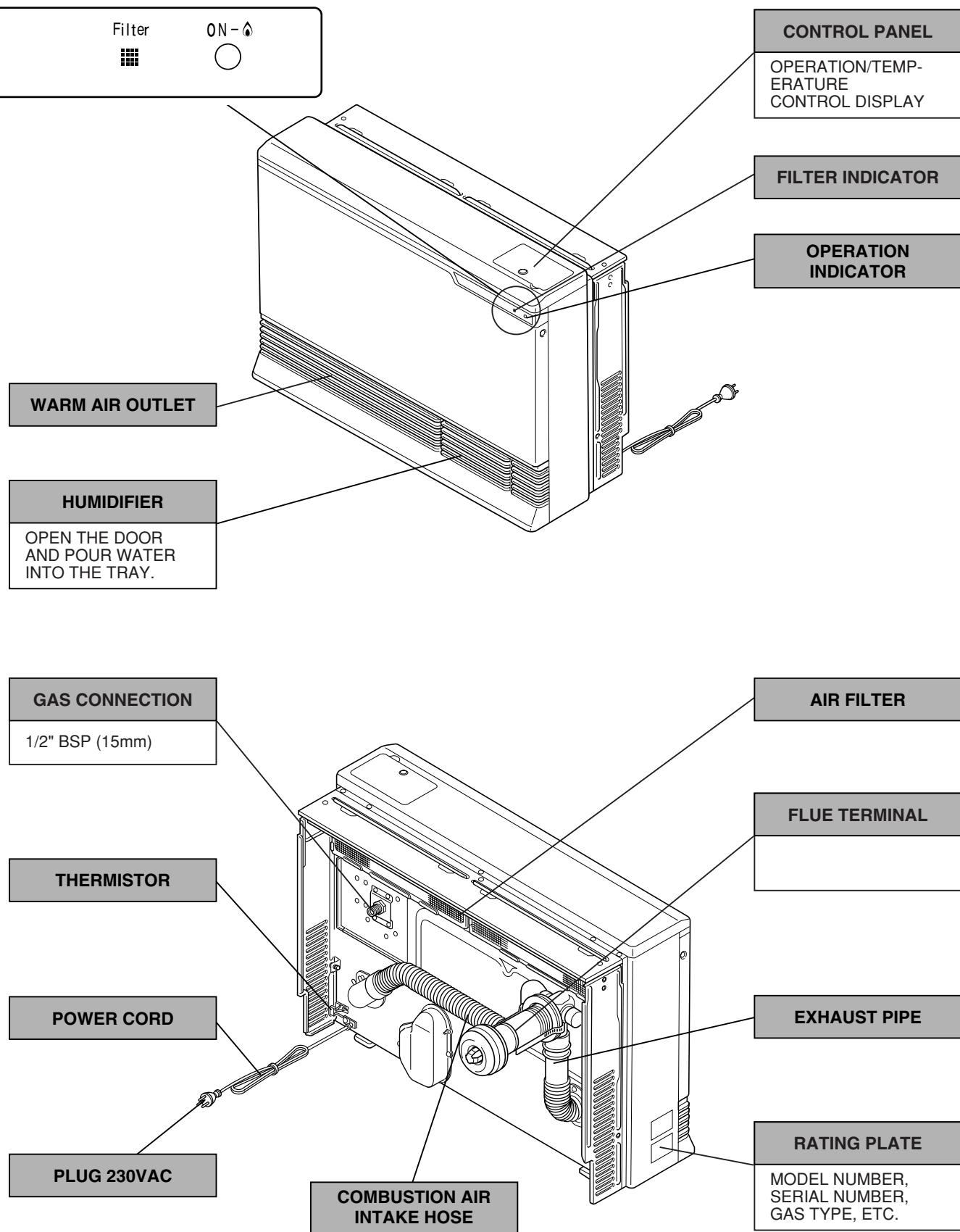
Function Lock: Prevents children from altering heater settings whilst running, or from activating the heater when turned off. This feature is utilised if the Control Panel Lid is unlocked.

Heater Filter Indicator: When the heater filter becomes covered with dust and the temperature inside the appliance rises, the heater filter indicator will flash indicating that cleaning is necessary.

The integral **humidifier tray** can be filled with water as required to raise the humidity level in the room.

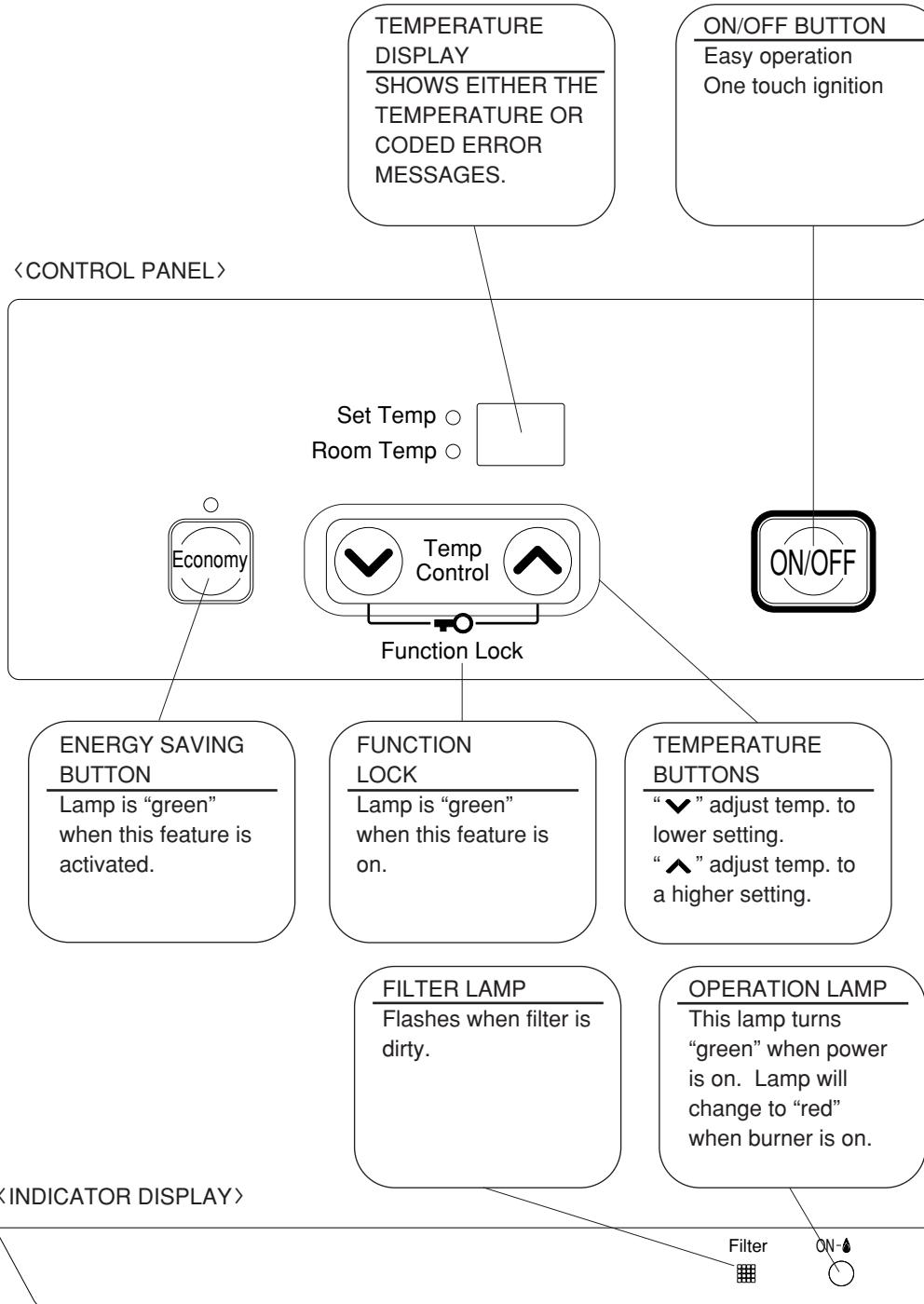
Room Sealed: Air for combustion is taken from the outside and the flue product is exhausted outside, keeping the room air clean.

GETTING TO KNOW YOUR NEW 1004T



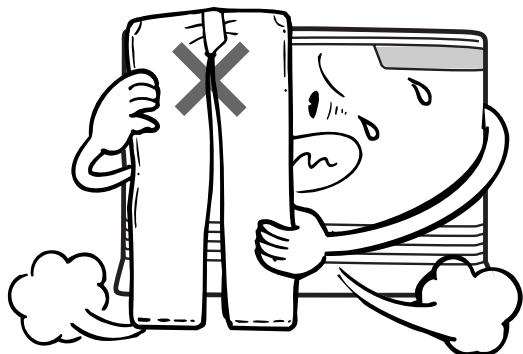
CONTROL PANEL

ALL BUTTONS BEEP WHEN OPERATED.

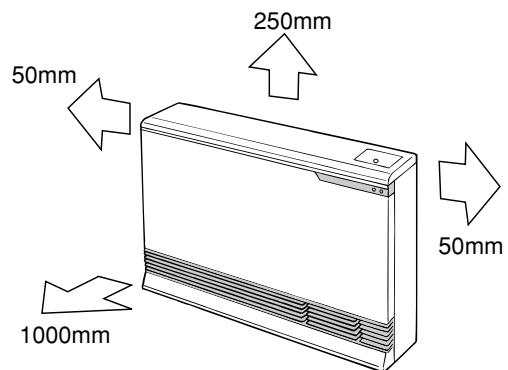


IMPORTANT POINTS

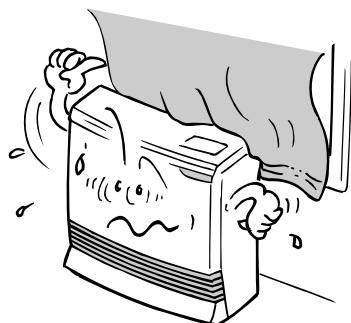
Do not use for any other purpose except heating.



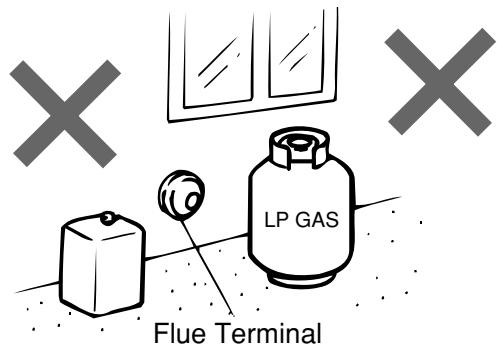
These clearances should be maintained at all times.



Do not allow curtains or other flammable materials to come into contact with the heater.

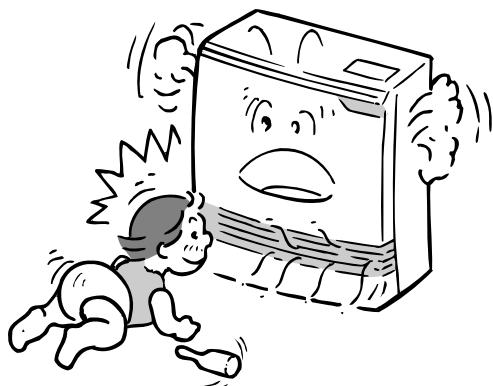


Keep flammable materials, trees shrubs etc. away from flue terminal.

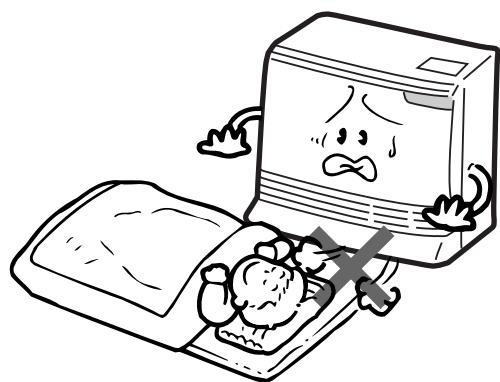


Do not store flammable products near the unit.

Supervise children near heater.

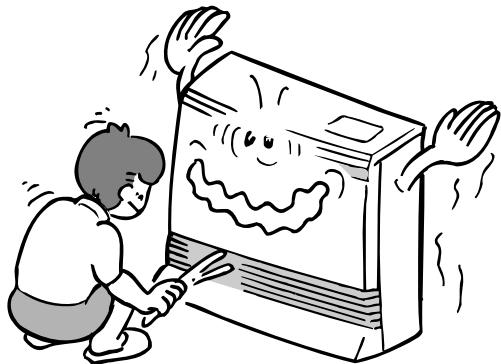


Do not allow young children or the infirm to sleep directly in front of the heater.

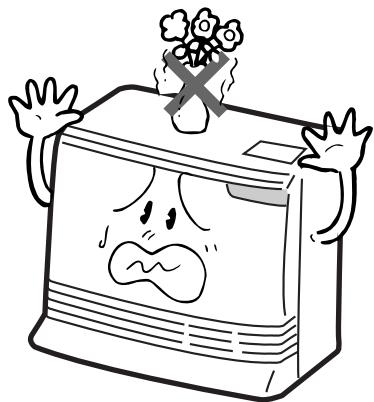


IMPORTANT POINTS

Don't allow children to 'post' articles in the louvres.



Don't place any articles containing liquids on top of the heater.

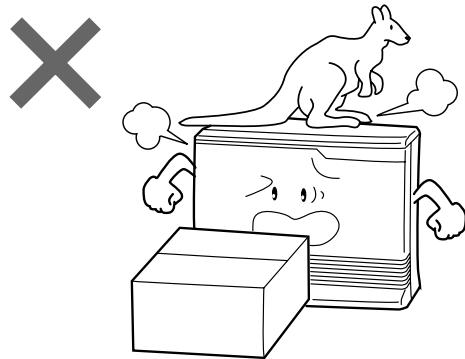


Don't spray aerosols on the heater whilst it is in operation.

Most aerosols contain butane gas and can be a fire hazard if used near this heater when in use.



Do not place articles on or against the heater.



Do not sit on this heater.

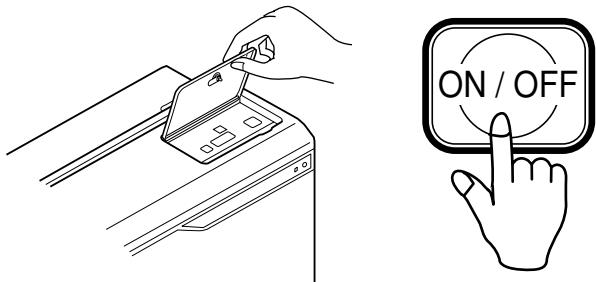


HOW TO OPERATE THE HEATER

■ Turning ON

● Press the ON/OFF button

- The ON indicator will illuminate green.
- The combustion fan will rotate.
- Ignition will take 5~10 seconds and the ON/Combustion indicator will change from green to red to let you know that the burner has ignited.



Note:

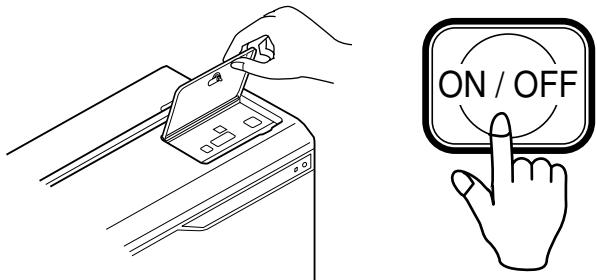
- When using the unit for the first time or after long periods of disuse, ignition may not occur the first time it is operated as there may be air in the gas pipes. If ignition does not occur after approximately 30 seconds the unit will cease operation automatically. Try operating the unit again if this occurs.

- The unit may make noises after ignition/extinction. This is the inside of the unit expanding and contracting and is normal.
- The heater will not ignite if the "ON/OFF" button is pressed straight after extinction. After approximately 20 seconds has passed the unit will automatically go back into ignition mode.

■ Turning OFF

● Press the ON/OFF button

- The ON/Combustion indicator will go out.
- After the indicator has gone out, the convection fan will continue to rotate for several minutes, then stop. This is to lower the temperature within the unit. Do not pull out the power cord during this time.



CAUTION !

- Do not pull out the power cord or disconnect the power during combustion to cause extinction, or straight after extinction, as this may cause damage to the unit.

When the Function Lock is set, the Function Lock indicator will continue to illuminate even when the unit is OFF and the Function Lock will not be cancelled.

ADJUSTING THE TEMPERATURE

Displaying, setting and adjusting the room temperature can only be done when the heater is operating.

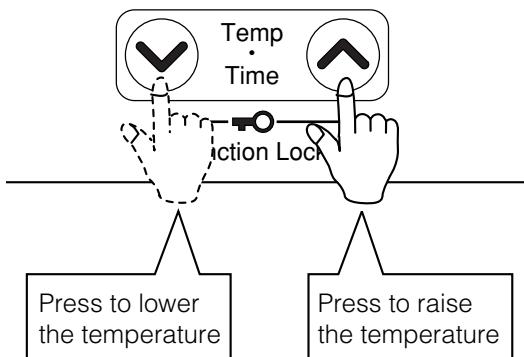
- When the unit is first operated, the room temperature is set at 22°C.
- Set the desired room temperature with the up and down buttons while looking at the display section.
- The "Set Temp" can be set to "L" or between "12" ~ "26", or "H" (continuous combustion on High).
- The "Room Temp" will display "L" (when lower than 1°C), "1" ~ "30" (at intervals of 1°C), or "H" (when higher than 30°C).
- Once a temperature is set, it will be stored in the microcomputers memory.

Note:

- Rooms may not arrive at the set temperature due to the construction of the room, the location of the unit, or external temperatures.

If the heater does not ignite then the pre-set temperature may not be set to a temperature which is higher than the actual room temperature.

Set Temp ○
Room Temp ○

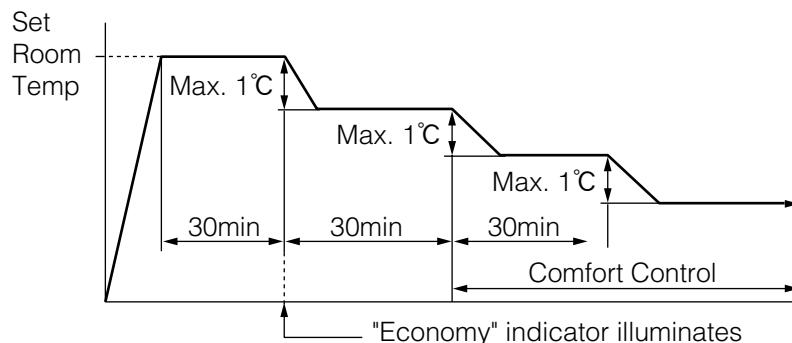


ECONOMY MODE

The Economy Mode, when selected, has the ability to reduce gas consumption and ultimately save energy. Once a room has reached the desired temperature, the unit will automatically begin reducing the set temperature gradually. This reduction is normally not noticeable, however, it is purely your choice whether to select this mode or not.

How it works

- After a room reaches the set temperature, the set room temperature will decrease 3 times automatically, each time, dropping by a maximum of 1°C in 30 minute blocks. From the second time onwards, the comfort control will automatically operate. (The comfort control alters combustion and fan speed more frequently to counteract the feeling of cold air.)
- The Economy indicator will illuminate to let you know that the Economy Function is selected.
- The Economy function will not operate when the set room temperature is less than 16°C or above 26°C.
- When the Economy function is operating, the current displayed room temperature may be lower than the set room temperature, however, this is normal.



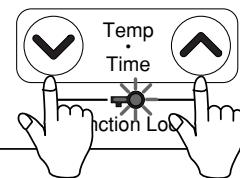
FUNCTION LOCK

The Function Lock will help to prevent accidental operation as well as small children from altering the heater settings.

1

The Function Lock can be operated either when the heater is running, or in the "stand by" mode, by pressing the up and down buttons simultaneously. The Function Lock is activated and the Function Lock indicator will glow.

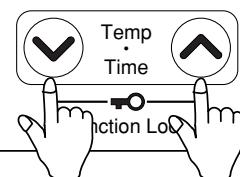
Set Temp ○
Room Temp ○



2

To de-activate the Function Lock, simply press both arrow buttons simultaneously for 2 seconds and the Function Lock indicator will go out. The lock can be de-activated at any time in this way.

Set Temp ○
Room Temp ○



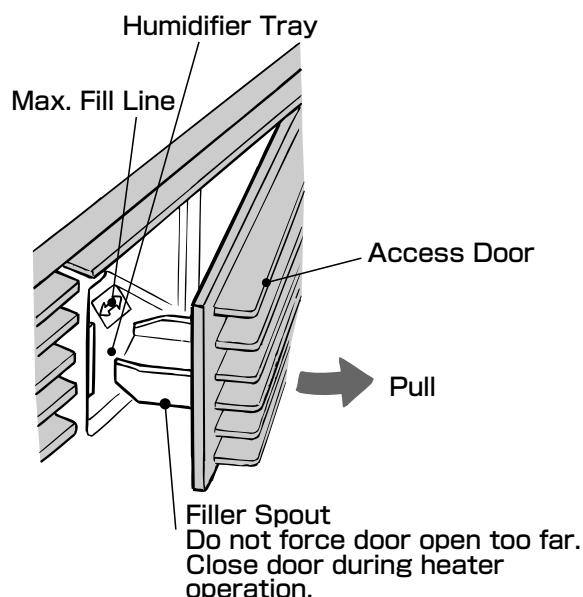
When the Function Lock is activated during normal operation all heater controls other than the OFF switch will be locked. Deactivating the lock releases the controls. If the lock is activated whilst the heater is turned OFF, then all heater functions will be locked. If the heater is turned OFF whilst the Function lock is activated, it cannot be turned ON again until the lock is deactivated.

OTHER OPERATING INFORMATION

■ HUMIDIFIER TRAY

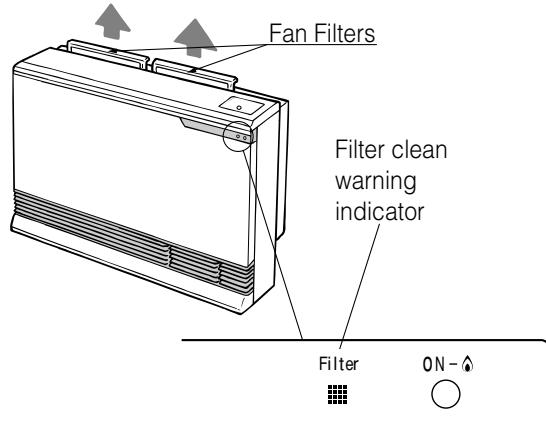
Your 1004T is fitted with an enamelled tray behind the air outlet so that you can humidify the air. To fill the tray, open the door as shown in the diagram and pour water into the tray using the spout built into the door.

The air will be humidified as it passes over the water in the tray. **DO NOT FILL THE TRAY WHILST THE UNIT IS IN OPERATION.** CLOSE THE DOOR AFTER FILLING. The 1004T is a very high efficiency appliance. During operation a small amount of water is produced in the flue tubes. This drains into the enamel tray. It is quite normal for a small quantity of water to remain in the bottom of the tray. If you are using the humidifier, it will need filling about once a day during the peak heating season.



■ FAN FILTERS

To protect the fan from dust and lint, the 1004T is fitted with 2 fan filters. They are located at the top, rear of the unit. To clean, pull the filters out of the unit and remove dust with a soft brush or a vacuum cleaner. Re-fit filters after cleaning. Your 1004T has a filter clean warning indicator that will illuminate when required, however, weekly cleaning is recommended during the peak heating season.



■ OUTSIDE FLUE

On cold days steam may be discharged from the flue outlet. This is normal with a high efficiency appliance and does not indicate any fault.

The heater and its flue must be installed correctly by an authorised person, and the installation must conform to all local regulations.

The installation also must comply with the instructions supplied by Rinnai.

This heater must be serviced, installed and removed by an authorised person.

No parts or functions should be modified or permanently removed from the heater or its flue.

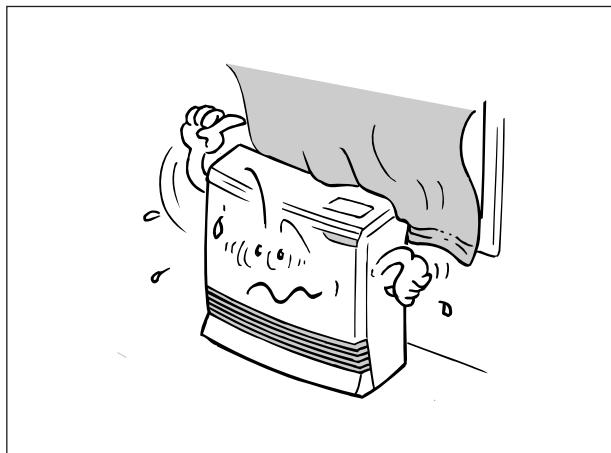
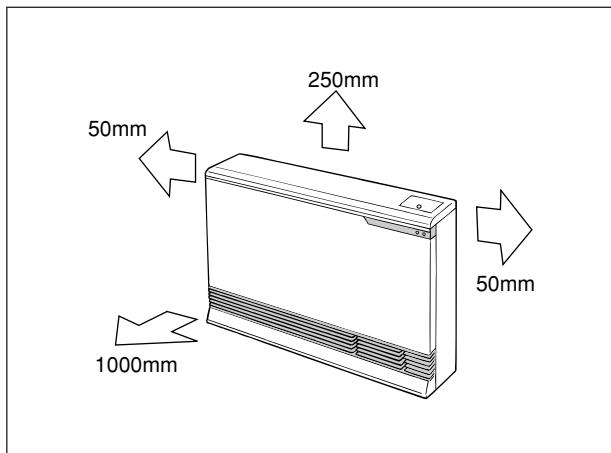
LOCATION

When positioning the unit the main points governing the location are:

- (1) Flueing
- (2) Warm Air Distribution.

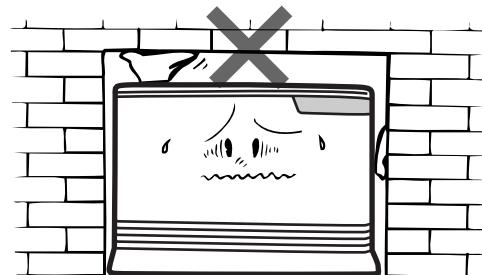
This heater must not be installed where curtains or other combustible materials could come into contact with it. In some cases curtains may need restraining.

See diagram for other recommended clearances.

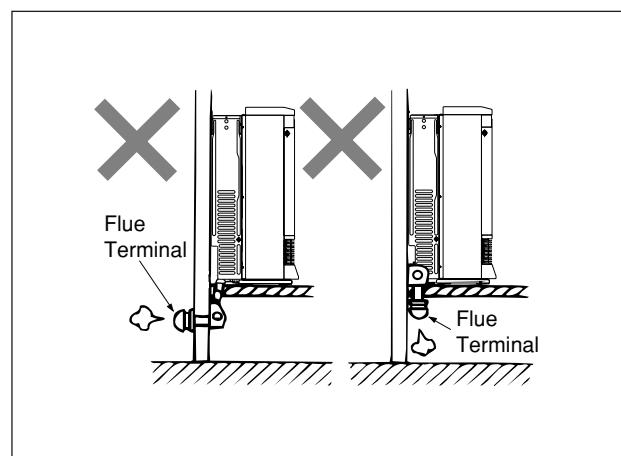


Flue fittings must be kept clear of flammable materials.

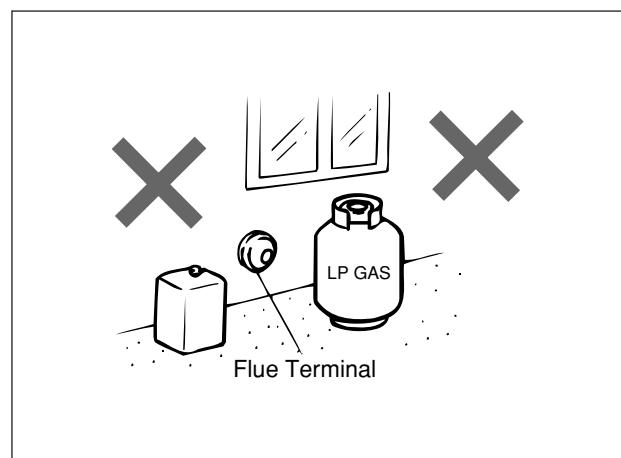
This unit is not designed to be built in.



Flue is not designed to be positioned under floors, or below the level of the heater.

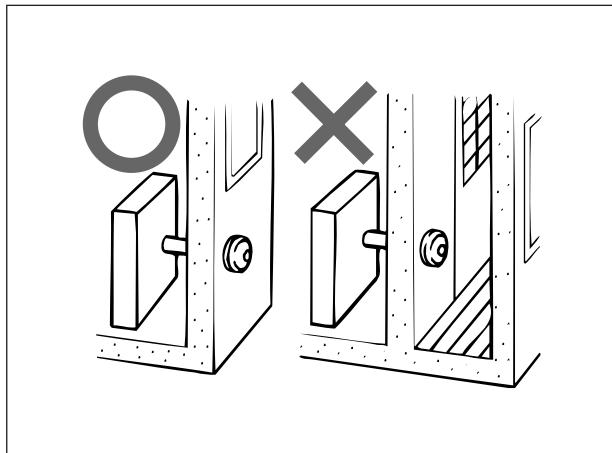


Flue terminal should be positioned away from flammable materials.



LOCATION

Do not flue into natural draught flues or fireplaces, this unit can only be used with a Rinnai flue kit.
(A flue kit is available to flue right through to the rear of most fireplaces Use this kit when the heater is going to be installed in front of a fireplace.)
Do not flue unit into other rooms.
Flue terminal must be outside.



Flue may be positioned directly under opening windows with a minimum clearance of 300mm.

Flue sizes:

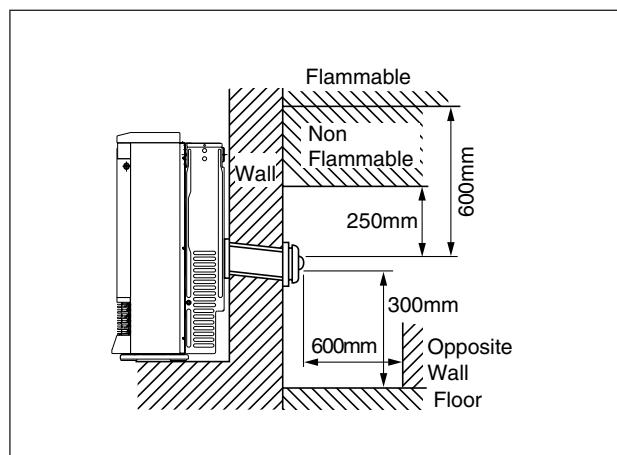
S	flue suits walls	75	-	115 mm
A	flue suits walls	115	-	240 mm
B	flue suits walls	240	-	400 mm
C	flue suits walls	400	-	600 mm
D	flue suits walls	600	-	800 mm
E	flue suits walls	800	-	1000 mm

25mm spacers are available for wall thicknesses less than 75mm.

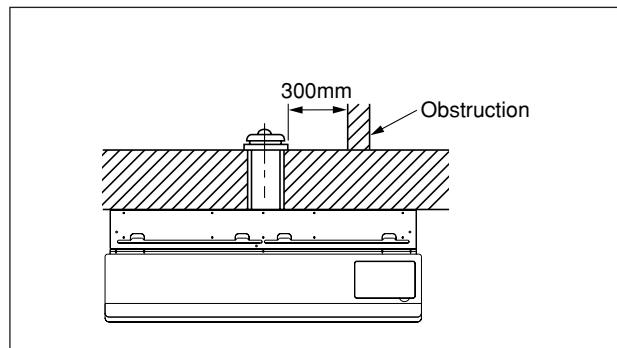
For information on special extra long flues, contact
Rinnai UK Ltd.

Standard Installation of flue manifold.

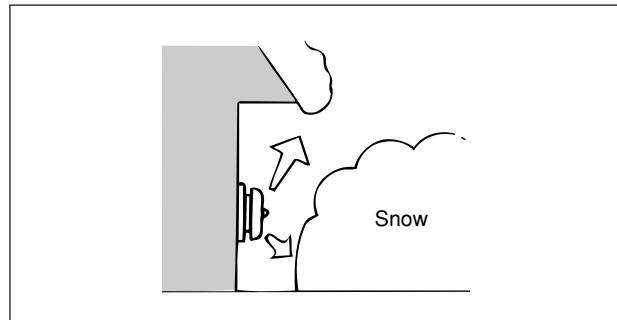
Diagram below shows minimum clearances and distances from obstructions.



Side Clearances.



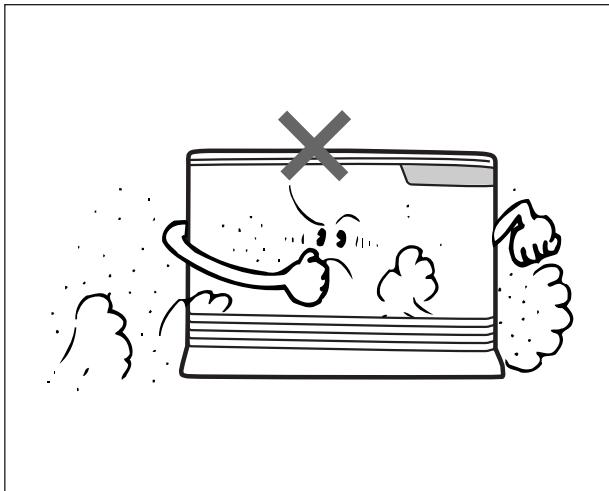
SNOW AREAS



In areas subject to heavy snowfall, keep snow clear of flue terminal at all times.

LOCATION

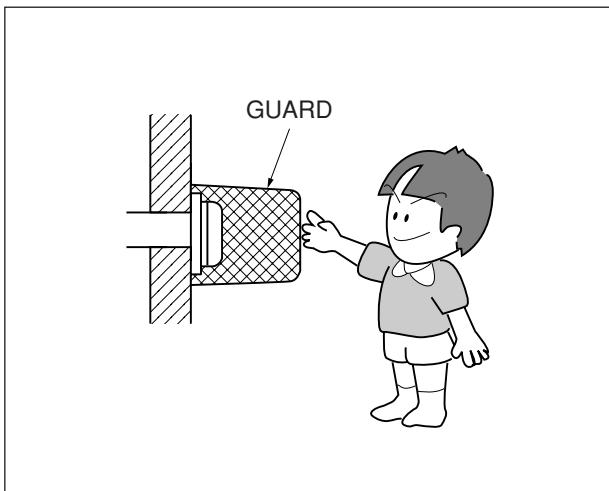
Do not install the unit in an unusually dusty area.



Use flue guard if the terminal is easily accessible to children.

Check local regulations.

Flue guards are available as an optional extra.



Floor must be level.

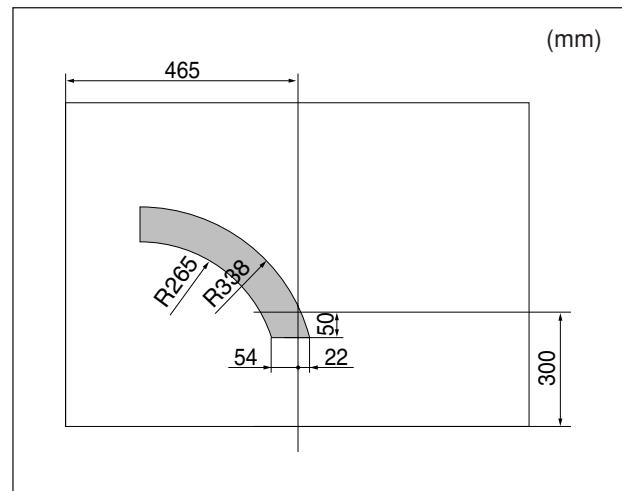
Do not use electrical extension cords to connect unit to power supply.

Keep the power cord away from the flue.

Flue manifold position.

Centre of hole for flue manifold can be drilled anywhere within the shaded area.
(To avoid studs etc.)

FOR WEATHERBOARD WALLS DRILL THROUGH CENTRE OF WEATHERBOARD FROM OUTSIDE, THEN DRILL FROM INSIDE THROUGH PLASTERBOARD.



When drilling the flue hole, check for water and gas pipes and electric cables before starting to drill.

Use an 80mm (8cm) drill for hole through wall.

INSTALLATION INSTRUCTIONS

Important Safety Instructions

1. Gas Safety (Installation & Use) Regulations 1998 are the 'Rules in Force'.
In your own interest and that of safety, it is law that all gas appliances shall be installed by competent persons in accordance with the above regulations.
Failure to install appliances correctly could lead to prosecution. Other persons should NOT attempt to install this equipment.
2. Unpack the appliance and check it carefully. If it appears to have any operating defects DO NOT INSTALL, but contact the supplier.
3. This appliance is intended to be used to raise the temperature in a room or office etc. You should NOT use it for any other purpose without seeking advice from the supplier.
4. This appliance is safe if correctly installed and sited. Please comply CAREFULLY with the instructions.
5. This appliance is to be used for NATURAL GAS (G20) and PROPANE (G31) only. It must NOT be used with any other type of gas.
6. Installation MUST be carried out in accordance with the current issue of:
 - a) Building Regulations issued by the Dept. of the Environment and Building Standards (Scotland Consolidation) Regulations.
 - b) I.E.E. Wiring Regulations for electrical installations.
 - c) Gas Safety (Installation and Use) Regulations 1998.
 - d) BS5871 Part 1:2001
 - e) BS5440 Part 1:2000 and Part 2:2000
 - f) BS6891 Part 1:1998 (Natural Gas) and BS5482 Part 1:1994 (Propane).
 - g) Local Byelaws
 - h) Children & Young Persons Act 1933 revised 1952
 - i) Health and Safety at Work etc. Act, 1974
 - j) Such other specifications or legislation that may have superseded the above documents.
7. Should the heater be fitted in a room where there are young children; elderly; infirm or handicapped persons, it is strongly recommended that a guard is fixed around the heater.

Guards conforming to British Standard Specification 6778:1986 (Fireguards for Use with Portable Free Standing or Wall Mounted Heating Appliances) in respect of fixing, strength and painted finish are acceptable and overall dimensions should be such that there is a gap of at least 100mm (4 inches) between the guard and the heater. Standard guards that meet these requirements are available from the supplier.

Please be sure you are aware of the implications of these notes.

MAKING ELECTRICAL CONNECTION

WARNING: This appliance must be earthed.

This appliance is suitable for use on 230V ~ 50Hz mains only and external wiring must be carried out to I.E.E. Regulations.

Connect the appliance to the mains electrical supply. A 3amp switched fuse spur with contact separation of at least 3mm on all poles, must be provided as a means of electrically isolating the heater for servicing purposes.

Observe polarity and that wiring is correctly restrained.

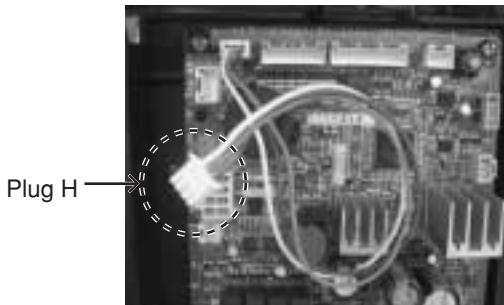
E	EARTH	Green / Yellow
L	LIVE	Brown / Red
N	NEUTRAL	Blue / Black

IMPORTANT

Do not use a clock or any other type of switch on the electrical supply apart from as the means of isolating the supply for servicing. (A clock or switch in the supply would also turn OFF the convection fan and allow overheating to take place).

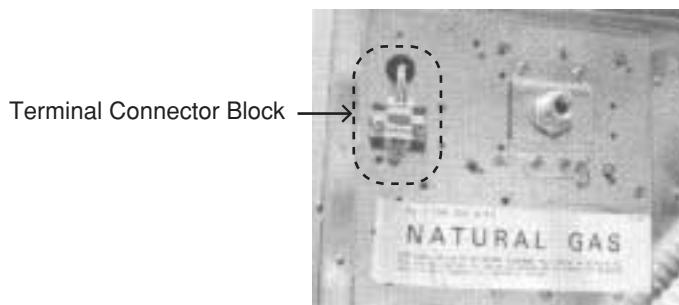
INSTALLATIONS NOT INCORPORATING A REMOTE TIMING DEVICE

When the heater is to be used as a stand-alone unit the central timer sub PCB fitted on the heater has to be disconnected from the main PCB. Disconnecting terminal plug H (white, red and blue wires), as indicated on the top wiring diagram of page 37, will enable the heater to operate independent of a timing device.



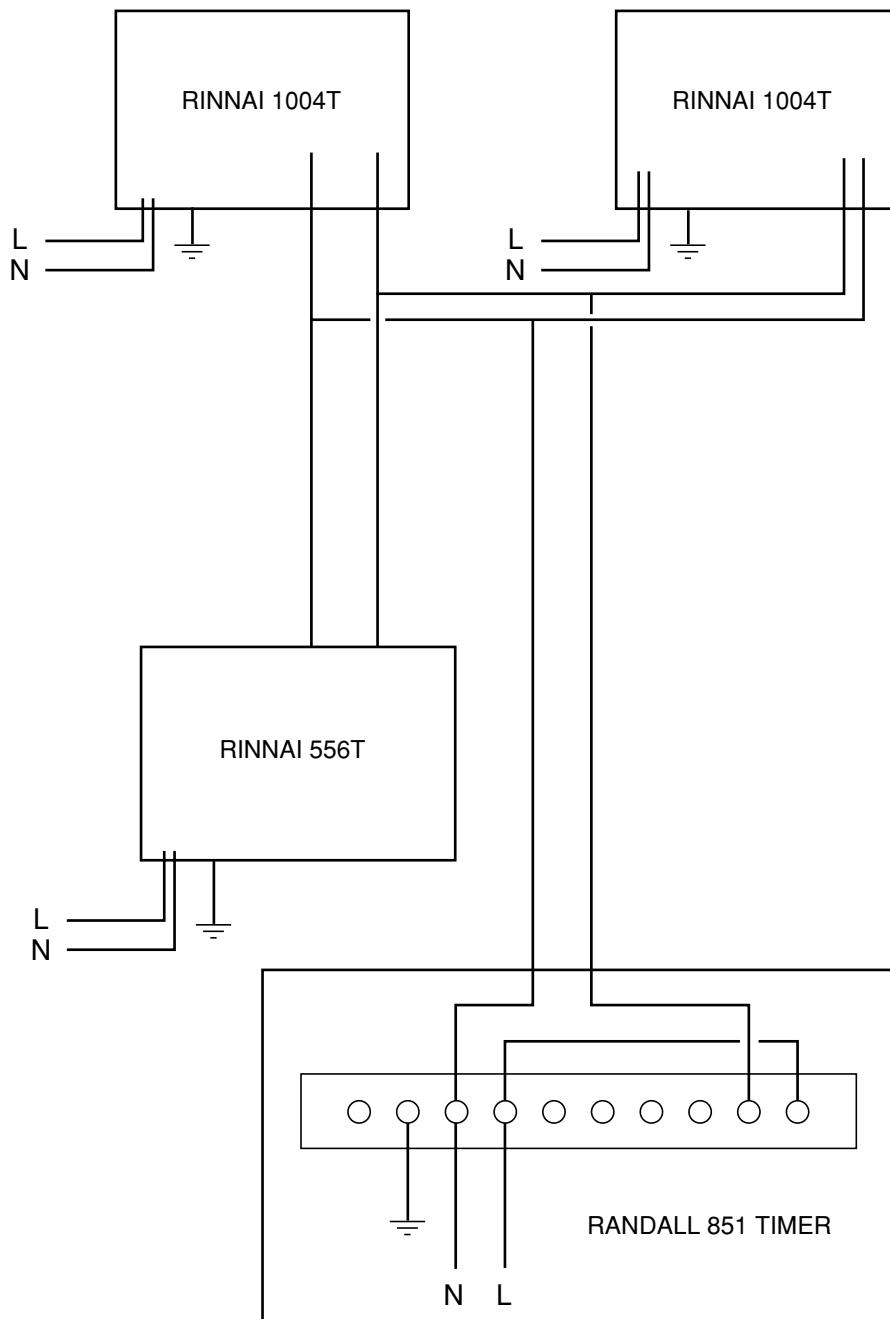
TIME CONTROL

It is necessary to make the time control electrical connection before the unit is fixed to the wall. The switch live and neutral wires from any remote timing device must be connected onto the terminal connector situated on the rear of the appliance. Removing the metal protection cover accesses this terminal connector block which is indicated in the photograph below. (Wiring diagram Page 37)

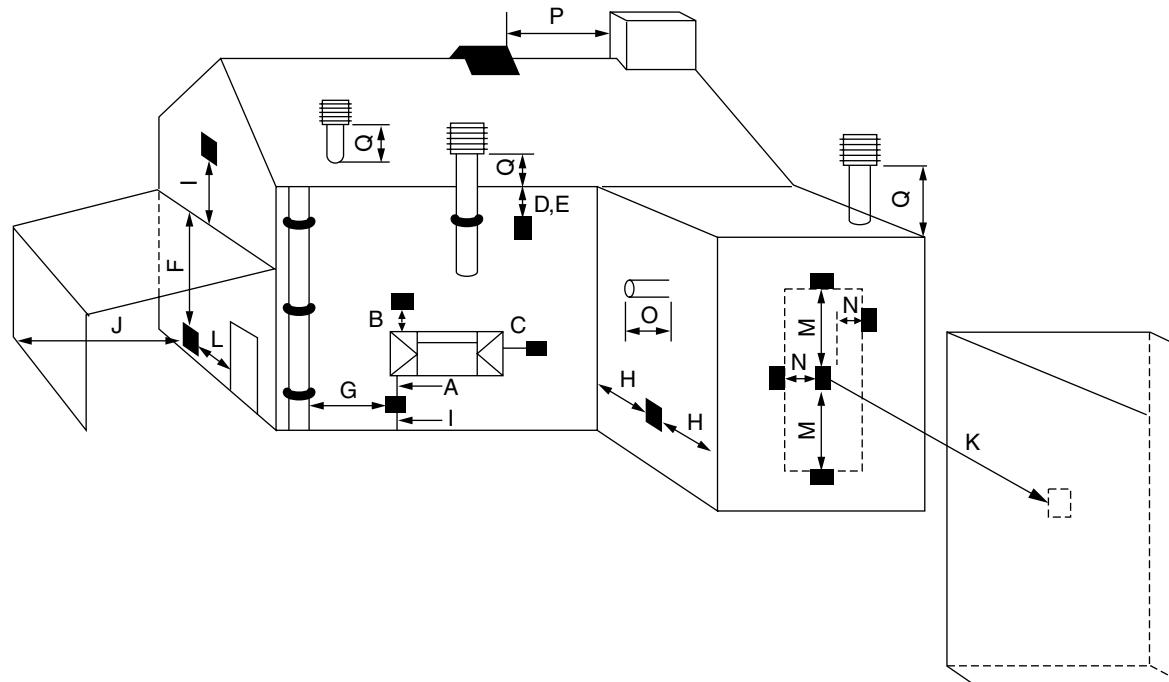


WIRING DIAGRAM FOR PROGRAMMER

For multiple Rinnai appliances using a single time clock.



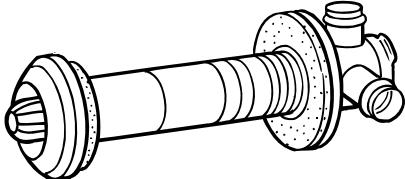
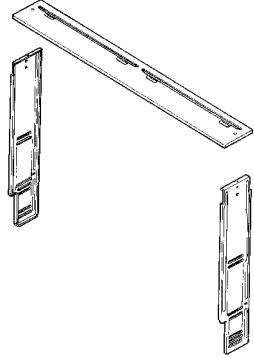
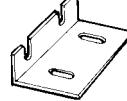
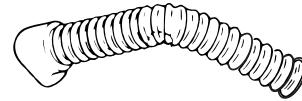
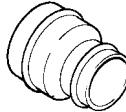
POSITIONING THE FLUE TERMINAL



Dimension	Terminal Position	Distance
A	Directly below an opening, air brick, opening windows, etc.	300mm
B	Above an opening, air brick, opening window, etc.	300mm
C	Horizontally to an opening, air brick, opening window, etc.	300mm
D	Below gutters, soil pipes or drain pipes.	75mm
E	Below eaves.	200mm
F	Below balconies or car port roof.	200mm
G	From a vertical drain pipe or soil pipe.	150mm
H	From an internal or external corner.	200mm
I	Above ground, roof or balcony level.	300mm
J	From a surface facing the terminal.	600mm
K	From a terminal facing a terminal.	1200mm
L	From an opening in a car port. (e.g. door, window) into a dwelling.	1200mm
M	Vertically from a terminal on the same wall.	1500mm
N	Horizontally from a terminal on the same wall.	300mm
O	From the wall on which the terminal is mounted	N/A
P	From a vertical structure on the roof.	N/A
Q	Above an intersection with roof.	N/A

INSTALLATION INSTRUCTIONS

■ The following components are supplied with your 1004T

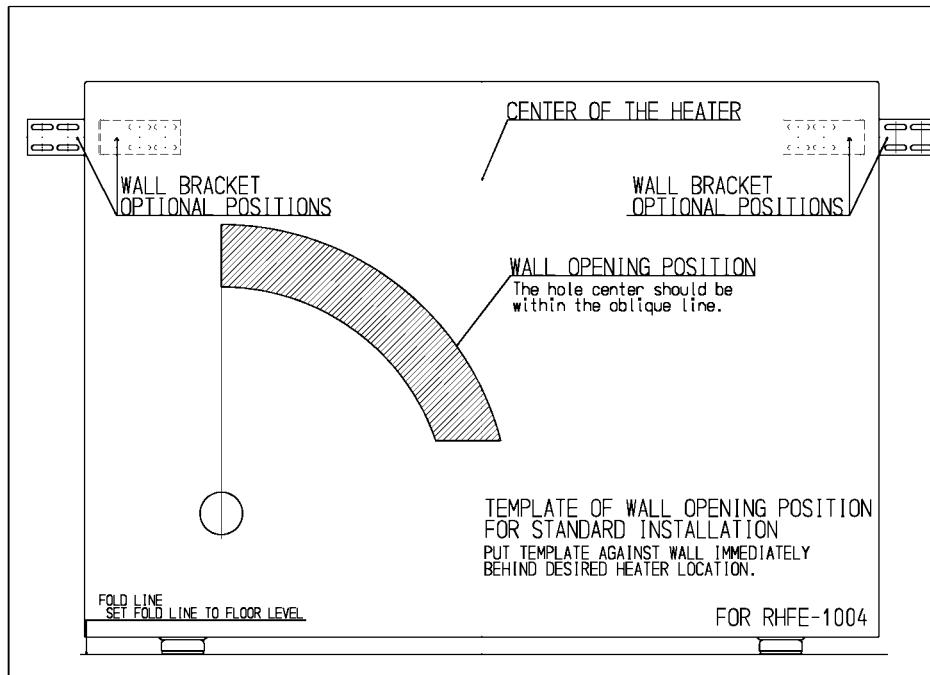
	Flue Manifold1		Spare rubber seal1	
				
			(For weatherboard installations)	
Back Spacer Set		1	Wall Brackets 	2
Floor Brackets		2	Insulation Clip 	1
Air inlet hose		1	Plastic tie for air inlet 	1
Exhaust adaptor		1	(M4) For Back Spacer Set 	7
Pipe stopper A&S		2	(M5) For Wall Brackets 	8
Pipe stopper E		1	(M4×20) For Flue Lock Stopper 	1
			(M4) For Flue Manifold 	3
			(M4.8×32) Wood Screws 	11
			Wall Bracket Screws Instructions	1

Check unit supplied is correct for the gas type.

Refer to data plate located inside front panel.

Check for damage. If the unit is damaged contact your supplier.
Do not install a damaged unit before checking with your supplier.

USING THE TEMPLATE



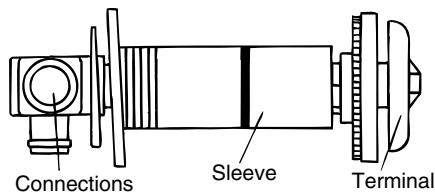
1. Fold the template along the bottom so that the bottom of the feet are at the edge of the paper.
2. Tape the template to the wall in the position that the heater is to be installed, with the feet sitting on the floor.
3. The centre of the flue hole can be located anywhere within the shaded area of the arc. For ease of installation choose the centre of the arc, in the middle of the shaded area. Other areas work, but fitting the heater is more difficult. Drill the hole 80mm in diameter.
4. Mark the position of the wall brackets. Before drilling the wall brackets double check the position of them by putting the heater up against the wall. Holding the wall brackets to the heater bracket check the position the markings on the wall. Once you are sure the position is correct drill the holes and fix the brackets to the wall using the screws provided.

SLEEVE AND MANIFOLD INSTALLATION

METHOD FOR STANDARD WALLS

1. Dis-assemble Manifold from Sleeve.

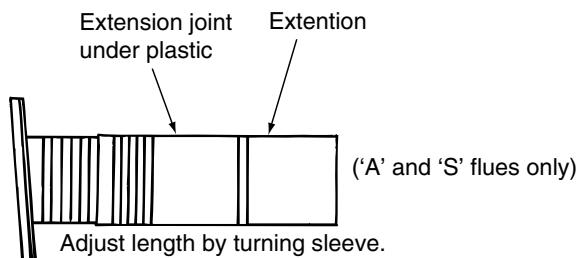
The flue consists of 3 parts, sleeve, inside connectors and tube, outside terminal; (dis-assemble by pulling hard on outside terminal and inner connections, then pull sleeve off outer terminal).



2. Adjustment of Sleeve Length.

Measure wall thickness through previously drilled 80mm hole.

End of sleeve should protrude 5-10mm from outside wall. Adjust sleeve length to wall thickness plus 5-10mm. (Sleeve is threaded for adjustment).

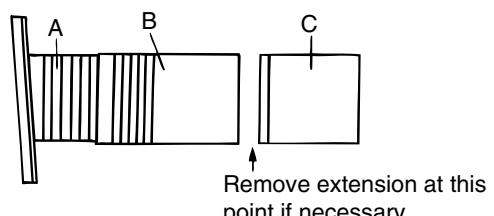


3. For A and S flues only

Depending on flue set and wall thickness extension piece 'C' may need to be removed. Cut plastic, remove extension, then follow instruction 2.

This applies to 'A' and 'S' flues only.

There is no extention on other flues, they can be fully adjusted by turning the threaded section.



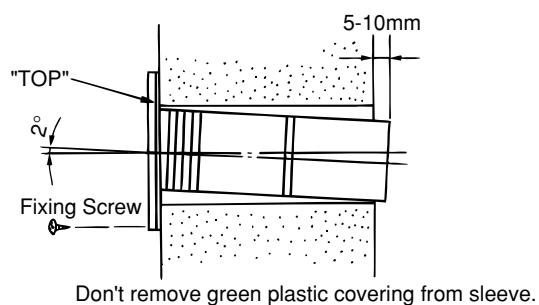
4. Fixing Sleeve.

Fix to the wall, using the 3 screws provided.

NOTE:

The flange is marked "TOP", sleeve must be fitted with this mark UP.

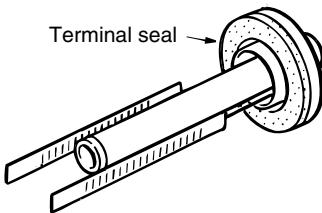
Check sleeve protrudes 5-10mm on the outside.



SLEEVE AND MANIFOLD INSTALLATION

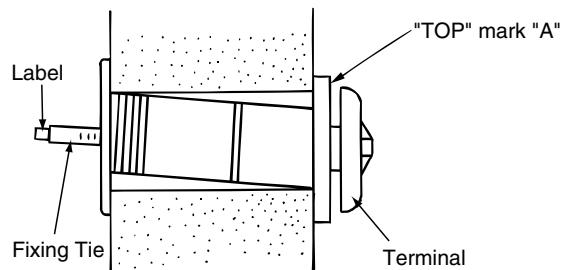
METHOD FOR STANDARD WALLS

- Check rubber seal is in place on terminal.



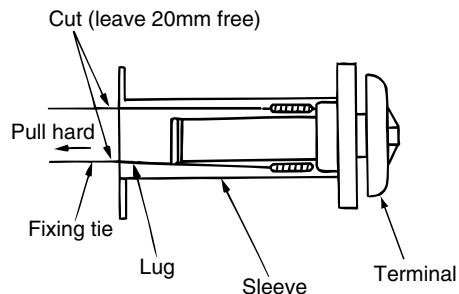
- Installation of Terminal

From outside, insert terminal into sleeve with the "A" mark at the top. Left hand side fixing tie is marked "LEFT" (from inside).

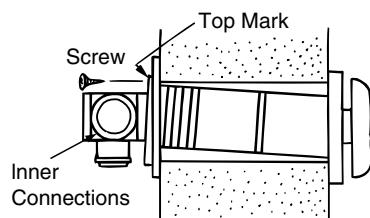


- Attaching Ties

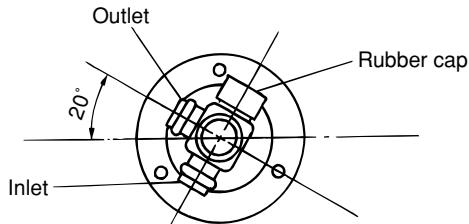
Pull hard on left and right hand side ties, clip ties over lugs inside sleeve. You should be able to pull ties 2 or 3 slots past the starting point. Cut the ties, leaving about 20mm past the lugs. Bend ties so they are parallel with the wall.



- Insert Inner Connection Assembly. Push assembly into the terminal tube, make sure "TOP" mark is uppermost. Fix with 3 screws provided.



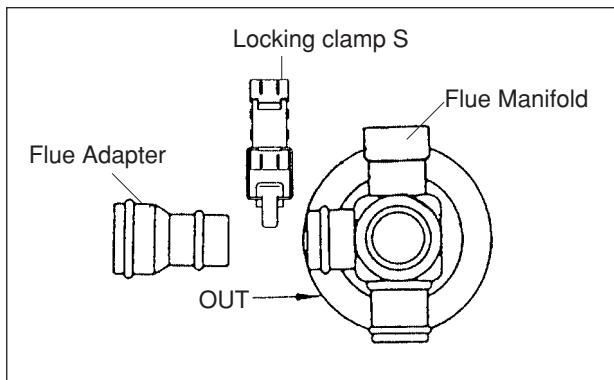
- Manifold can still be turned after attaching.



FITTING UNIT

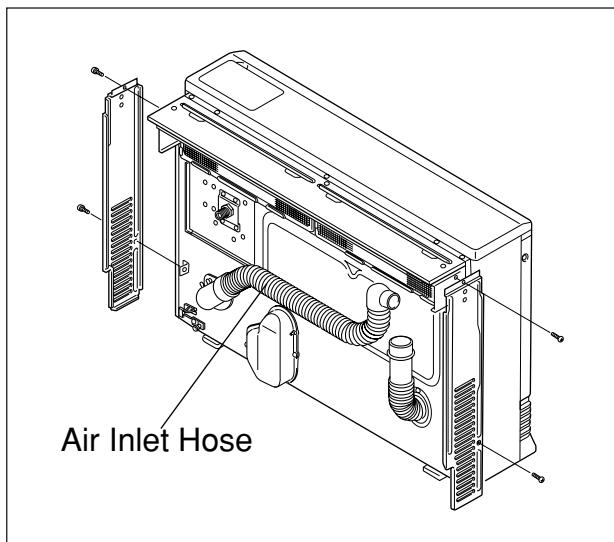
Fix Flue Adapter to Flue.

Manifold with Locking Clamp S as shown below.



Fit Air inlet Hose to heater

Fix Side Back Spacers with screws.



Fit Inlet Elbow

Fit a suitable inlet fitting to the male 1/2 inch BSP threaded fitting on the rear of the heater.

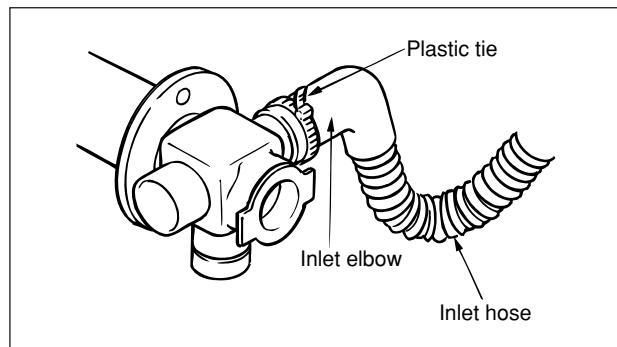
The appliance can then be connected with 15mm copper tube.

Air Inlet Hose

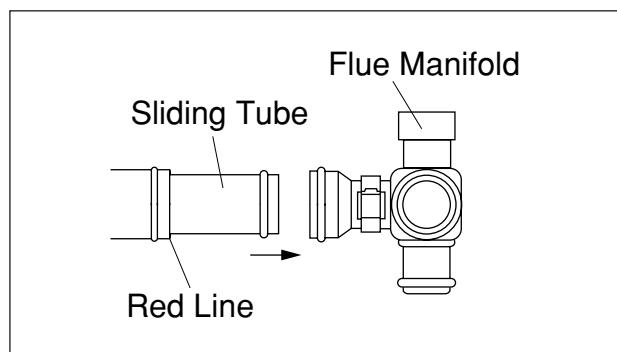
Connect Air Inlet Hose to Manifold Inlet.

Do not kink the hose.

Secure with plastic tie as shown below.

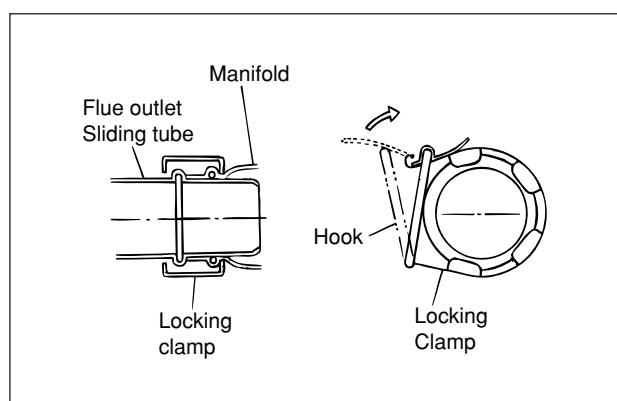


1. Connect the flue outlet tube to the manifold by extending the stainless steel sliding tube until it is fully inserted into the manifold.



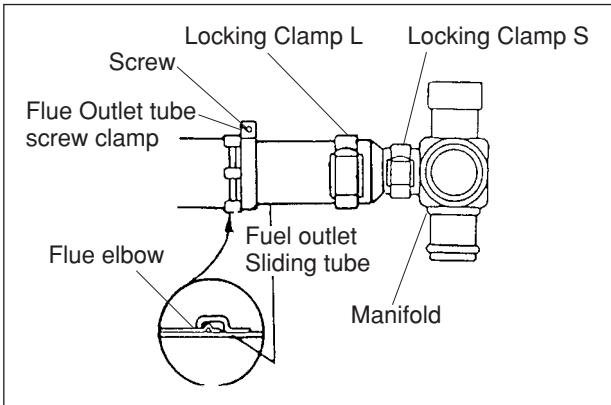
Sliding Tube should not be extended beyond the RED LINE.

2. Fit the Locking Clamp L over connection between sliding tube and manifold. Engage the hook and rotate it until it snaps against the body of the clamp.

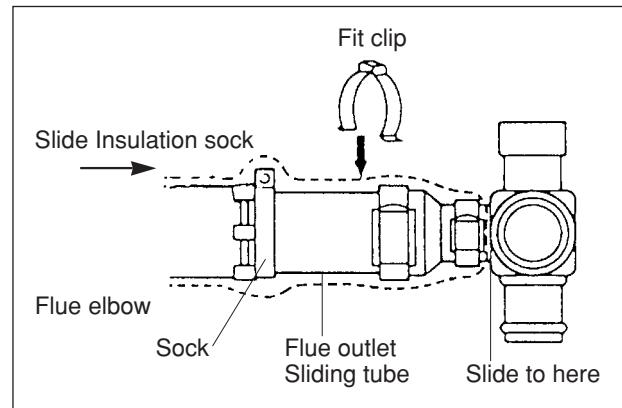


FITTING UNIT

3. Fit the screw clamp between the sliding tube and the flue elbow. Secure with the 4mm screw supplied. The flue outlet is now locked into position.



4. Slide the insulation sleeve up to the flue manifold. Slip the securing clip over the sleeve as shown.



FORCED FLUE HEATER EXTENSION KITS

EXTENSION SET PARTS AND INSTALLATION GUIDE

FOT - 102

FOT - 103

FOT - 114

FOT - 115

Rinnai

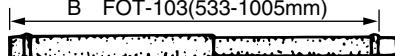
- This extension set is to be used for installations requiring extra distance.

MAXIMUM FLUE LENGTH 7 METRES. REDUCE LENGTH 1 METRE FOR EACH BEND USED.
(E.G. 4 METRES, 3 BENDS)

■ NAMES AND NUMBERS OF PARTS

A FOT-102(290-515mm)

B FOT-103(533-1005mm)



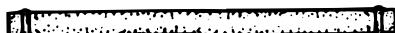
① EXHAUST PIPE



⑥ PIPE STOPPER A

⑨ PIPE CLAMP

⑫ SCREW A



② EXHAUST PIPE (STRAIGHT) 1 Metre



⑦ PIPE STOPPER B

⑩ WALL-FIXTURE

⑬ SCREW B



③ AIR INTAKE HOSE



⑧ TOP STOPPER

⑪ NUT

⑭ O RING

④ BENT ELBOW



⑤ HOSE JOINT

		FOT-102	FOT-103	FOT-114	FOT-115
①	A EXHAUST PIPE	1			
	B EXHAUST PIPE		1	1	
②	EXHAUST PIPE (STRAIGHT)			1	
③	A AIR INTAKE HOSE	1			
	B AIR INTAKE HOSE		1		
	C AIR INTAKE HOSE			1	
④	BENT ELBOW				1
⑤	HOSE JOINT	1	1	1	
⑥	PIPE STOPPER A	1	1	2	2
⑦	PIPE STOPPER B	1	1	1	
⑧	TOP STOPPER	1	1	1	
⑨	PIPE CLAMP	2 SET	3 SET	4 SET	
⑩	WALL FIXTURE	2	3	4	
⑪	NUT	2	3	4	
⑫	SCREW A	2	3	4	
⑬	SCREW B	4	6	8	
⑭	O RING				1

■ TYPES COMPATIBLE WITH EXTENSION SET

RHFE-1004T

INSTALLING AN EXTENSION KIT

Installing an extension kit requires construction of an air line and the exhaust line. The air line is connected between the Air Supply Elbow at the rear of the heater and the air inlet port on the Flue pipe. Similarly, the exhaust line is connected between the joint pipe at the rear of the heater, and the exhaust port on the Flue pipe.

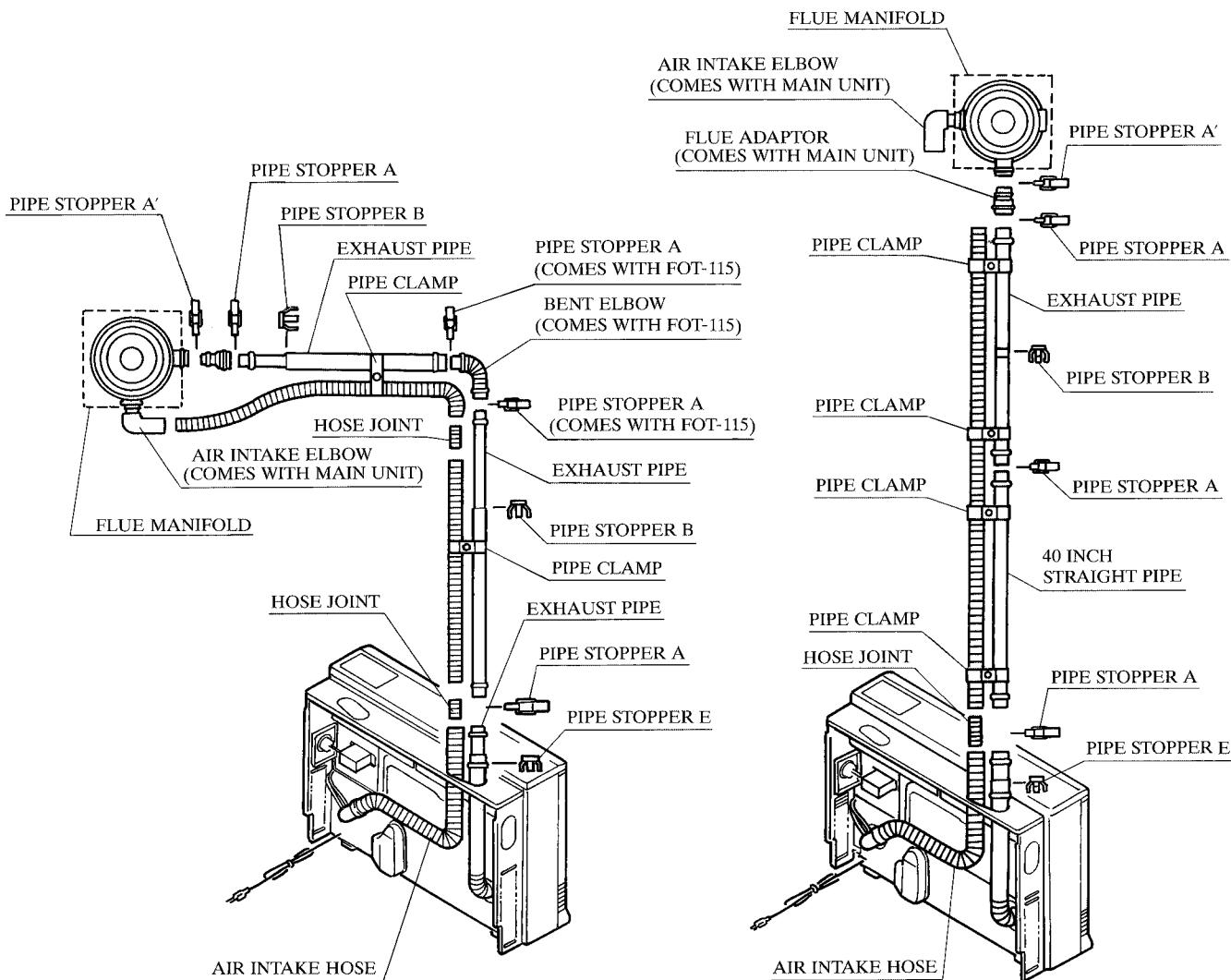
Caution: Check to see there is no debris in pipe or hose.

■ HOW TO INSTALL

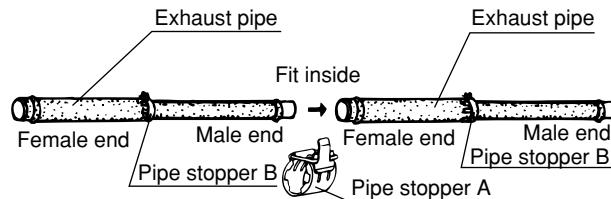
MODEL: RHFE-1004T

Example: Using 2 sets of extension set and 1 bent set.

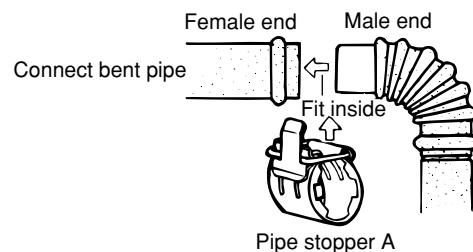
Example: Using 2 metre extension set.



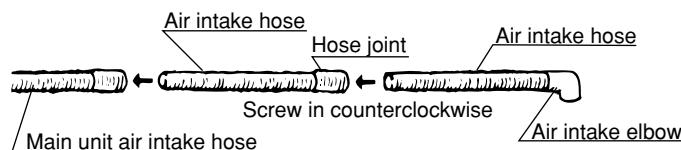
1. How to connect exhaust pipes



To connect the exhaust pipes, fit the male end into the female end and clamp with pipe stopper A to prevent slipping. The exhaust pipe can be telescoped to the required length; do not cut it.



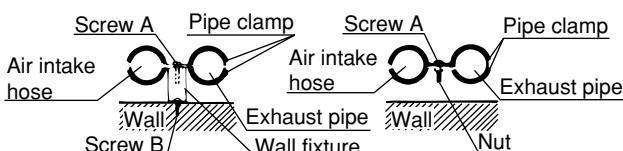
2. How to connect air intake hose



Screw hose joint half of its length onto the air intake hose, then screw another air intake hose into the joint. The hose can be cut to the required length.

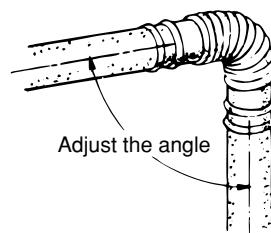
IMPORTANT: The PVC air line is longer than the exhaust line and may need to be cut to size. Be sure, however, to thoroughly deburr all rough edges.

3. Affixing the air intake hose and exhaust pipe



- Set the air intake hose and exhaust pipe into the pipe clamps, screw the clamp onto the wall fixture, and affix to the wall with screw B.
- The air intake hose and exhaust pipe can also be screwed onto the wall using the pipe clamp and the nut.

4. How to use the bent pipe



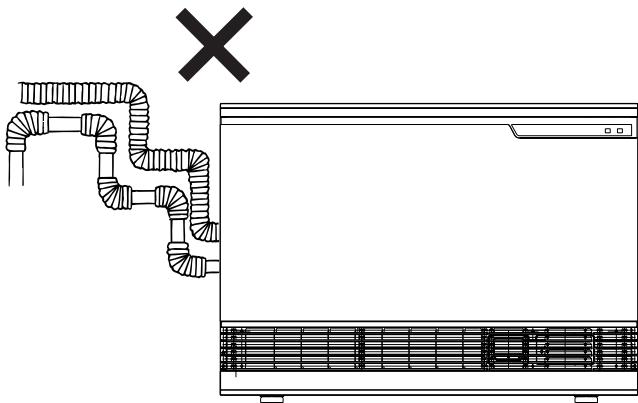
With the exhaust pipes inserted into the ends, bend the bent pipe to the angle required for installation.

This part is mainly used for curves and for connection to vent terminal.

■ CAUTIONS

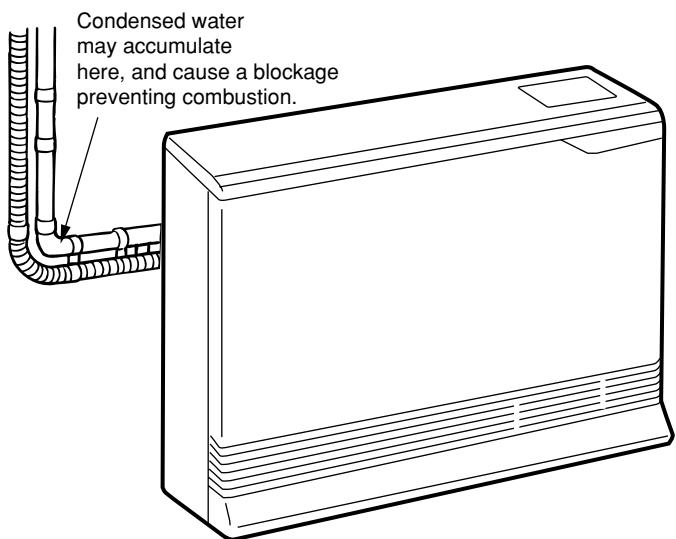
1. Maximum extendable length

FOR BEST ROOM AIR HUMIDITY, KEEP WATER IN THE HUMIDIFIER TRAY.



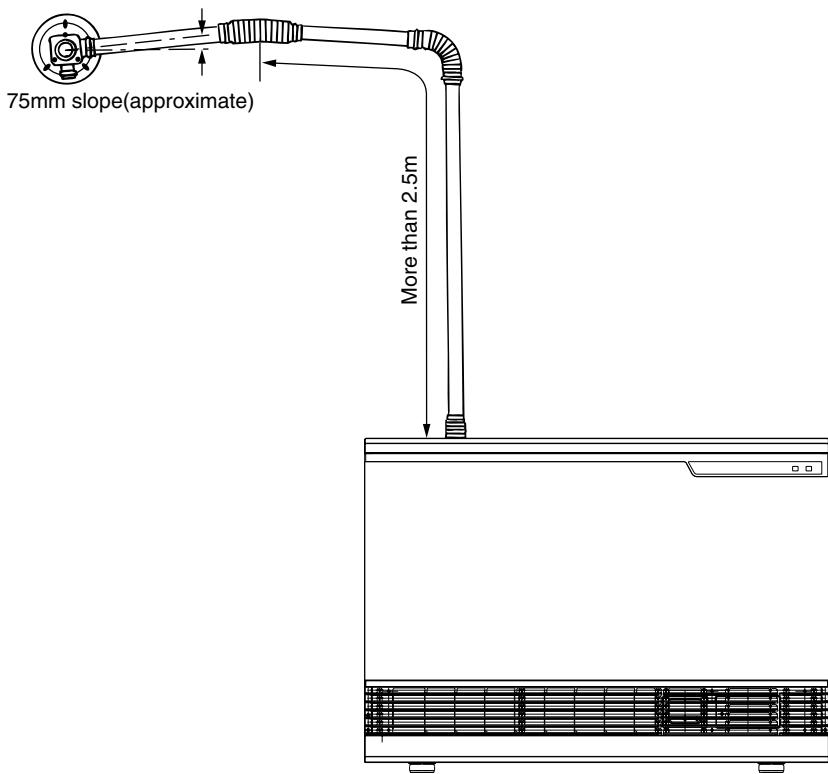
- 7 metres. Reduce length 1 metre for each bend used.
(e.g. 4 metres, 3 bends)
 - The bend where the hose and pipes leave the body is not counted.
 - The air intake hose should run along the exhaust pipe.
3. Condensed water formed by combustion, will run back to the unit, and may overflow from the condensation pan if pipes are longer than 2.5 metres. Therefore, pipes exceeding these lengths should be made to drain to the outside by giving their horizontal portions 75mm or more downward and outward slope.

2. To prevent water condensation

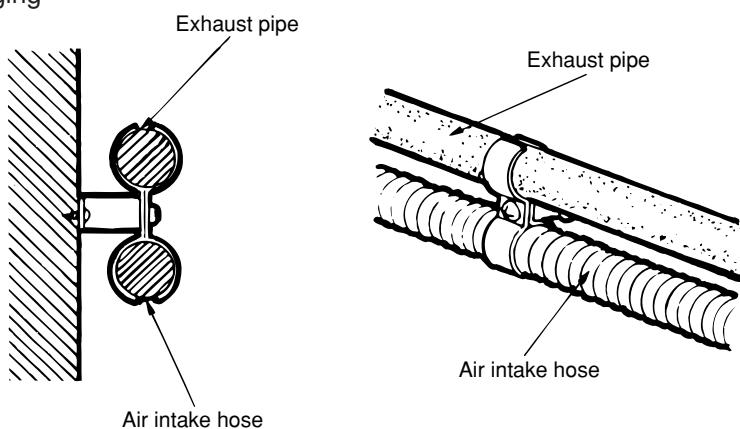


CAUTION

Never allow the exhaust pipe to sag, as condensed water may accumulate and cause incomplete combustion.



- Wherever the air intake hose and exhaust pipe run sideways, try to have the exhaust pipe on top (to prevent the air intake hose from sagging onto the exhaust pipe).



TESTING

Purge air and swarf from gas line. Connect gas. Gas connection should be made with a union fitting and a suitable isolation valve for servicing. Do not use hot works near the unit or the gas valve may be damaged. Refer to BS 6891 Part 1:1998 (Natural Gas) and BS5482 Part 1:1994 (Propane), if in doubt about the size of the gas line.

Connection can easily be reached from the top, rear of the unit. Check for escapes, using a suitable means of detection, after turning gas on. Remove outer case, 1 screw at top left side and 1 at top right side. Disconnect plug leading to the pcb on the front cover.

Remove test point screw, attach pressure gauge to test point, (on solenoid valve).

Plug unit in and turn power on, (CAUTION-230V inside unit).

Turn thermostat to "HI", turn control to "ON".

Unit should ignite within 10 seconds. (If unit does not ignite first time it will spark again after 10 seconds).

If unit still does not ignite, there may be air in the gas line, turn control "OFF" then "ON" again.

Check pressure according to the procedure on the following page. Regulator is factory set, if pressure is incorrect, check supply before altering regulator.

Turn control to "OFF" position, remove pressure gauge and replace test point screw.

Re-light unit, on "HI" setting.

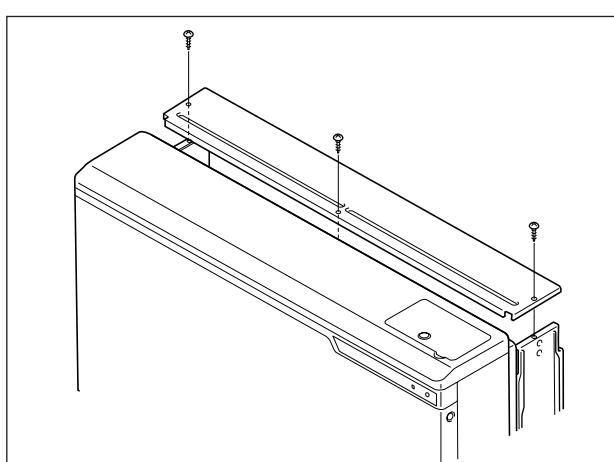
Adjust temperature down Slowly.

The heater will cut down, then cut out (Depending on the room temperature).

Turn the power off. Replace the casing.

Turn power on.

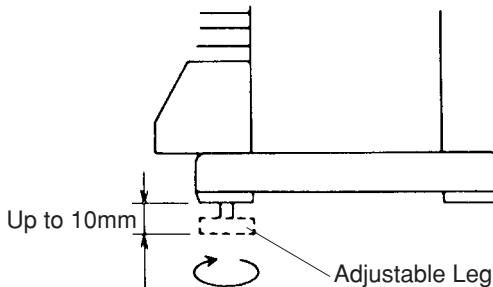
Re-check operation.



Replace top spacer, clipping the spacer into the wall brackets at the same time as attaching it to the heater.

Secure top spacer with the screws provided.
THE HEATER IS NOW SECURED TO THE WALL.

Leveling screws (Adjustable legs)



If necessary the unit can be levelled using the adjustable legs under the front right and left hand side legs.

GAS PRESSURE SETTING PROCEDURE

1. Disconnect/Isolate 230V power supply.
2. Carefully remove front cover and disconnect the plug attached to the PCB on front cover.
3. Connect manometer to pressure test point on the front of the gas valve.
4. Reconnect 230V power.
5. Press ON/OFF button to operate the heater.
6. Press SW1, the blue button on the main PCB, to select “Settings” mode “78” will be displayed on the control panel.
7. Press SW1 again to access “Low Pressure” mode. “PL” will be displayed on the control panel.
8. Adjust low Pressure using “**▲/▼**” buttons. The “**▼**” button lowers the pressure and the “**▲**” button raises the pressure.
9. Press the Economy button to save pressure setting “18” will be displayed on the control panel.
10. Press SW1 twice to access “High Pressure” mode. “PH” will be displayed on the control panel.
11. Adjust high pressure using the “**▲/▼**” buttons. The “**▼**” button lowers the pressure and the “**▲**” button raises the pressure.
12. Press the Economy button to save pressure setting. “78” will be displayed on the control panel.
13. Press ON/OFF button to turn the heater off.
14. Remove guage from test points and replace test point screw, fire the heater again and check connection for gas leaks.

Gas Pressure Settings	Nat Gas (G20)	Propane (G31)
Low Pressure (mbar)	4.9	10.7
High Pressure (mbar)	8.8	23.3

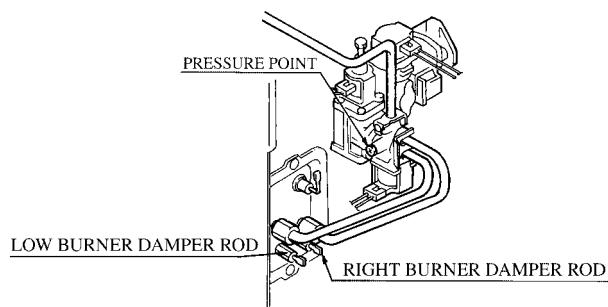
GAS CONVERSION PROCEDURE

1. Disconnect/isolate 230V power supply
2. Carefully remove front cover and disconnect the plug attached to the PCB on the front cover.
3. Press PCB switch while unit is off to change to gas type setting mode. **Current gas type code will be indicated (L1: LPG; A1: NG).**
4. **Change gas type code using “ \wedge ” and “ \vee ” buttons.**
5. Press PCB test switch once to record data.
6. Replace burner injectors and adjust damper opening ratio to suit changed gas type as per following chart:

	Low Burner		Burners Right & Left	
	NG	LPG	NG	LPG
Injector	1004F-2036-A-1.95	1004F-2036-A-1.20	1004F-2031-A-1.80	1004F-2031-A-0.95
Size (mm dia)	1.95	1.20	1.80	0.95
Damper Opening Ratio	7/10	10/10	10/10	10/10

Burner damper rods are situated adjacent to the three burner injector feed pipes and should be adjusted as per these instructions i.e. 7/10s and 10/10s.

When reconnecting burner feed pipes ensure the unions are not over tightened, otherwise damage to the O ring seal may result.



7. **Carry out items 3-13 in Gas Pressure Setting procedure Page 30, for the relevant gas type.**

CARE OF YOUR 1004T

This unit needs very little maintenance. Simply clean the fan filters once a week and wipe the outer case with a soft damp cloth.

DO NOT USE SOLVENTS.

Check the flue terminal occasionally to make sure shrubs etc. have not grown around it.

UNIT CHECK LIST Please check this list before asking for service.

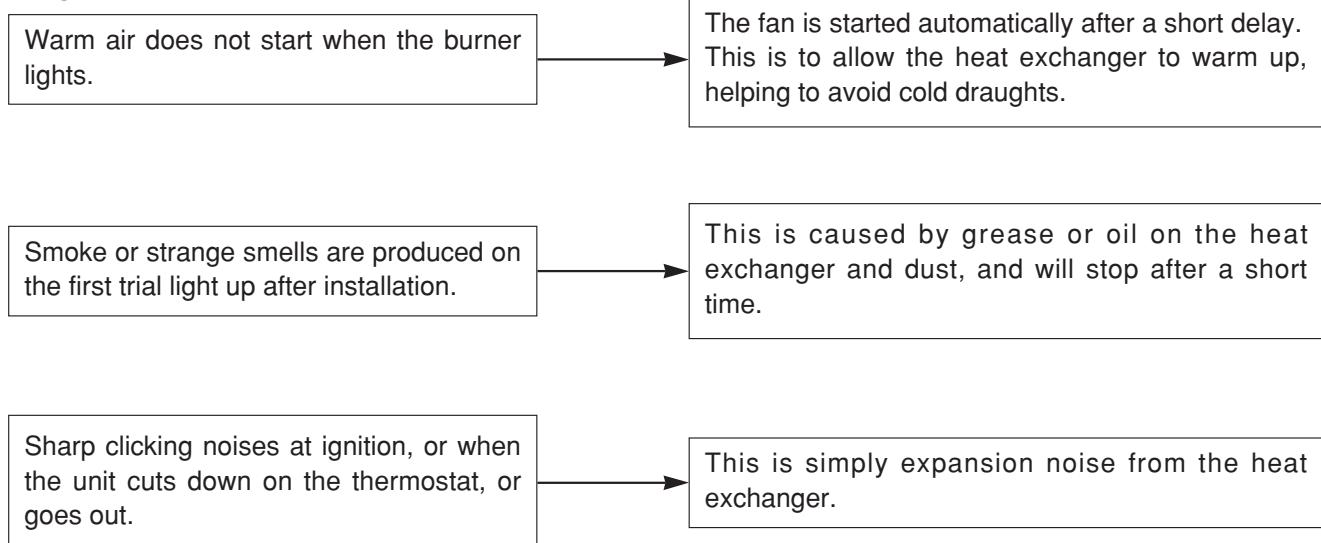
Cause	Problem							Remedy
	No Operation lamp	Burner doesn't ignite	Unusual combustion	Combustion stops during operation	Smell of gas	Noisy ignition	Takes too long to warm the room	
Not Plugged In	●	●						Plug In
Power Cut	●			●				Re-ignite manually after power is restored
(Initial Installation) Air in gas pipe		●						Purge air (Installer)
Gas Filter Blocked		●	●				●	Service Call
Mis-ignition	●	●						Check customers instructions
Flue terminal obstructed			●	●	●			Clear obstruction
Flue manifold not connected						●		Service Call
Louvre obstructed				●			●	Clear obstruction
Air filter blocked				●			●	Clean filter (weekly)
Gas escape					●			Service Call
Room too large							●	Check with retailer
Gas turned off at meter		●	●					Turn gas on
Function Lock Set		●						Cancel Function Lock

If you are unsure about the way the unit is operating, contact Rinnai UK Ltd. or your supplier.

PRE-SERVICE CHECK

Before asking for a service call please check the following.
These points are part of the normal operation of the unit.

At ignition :



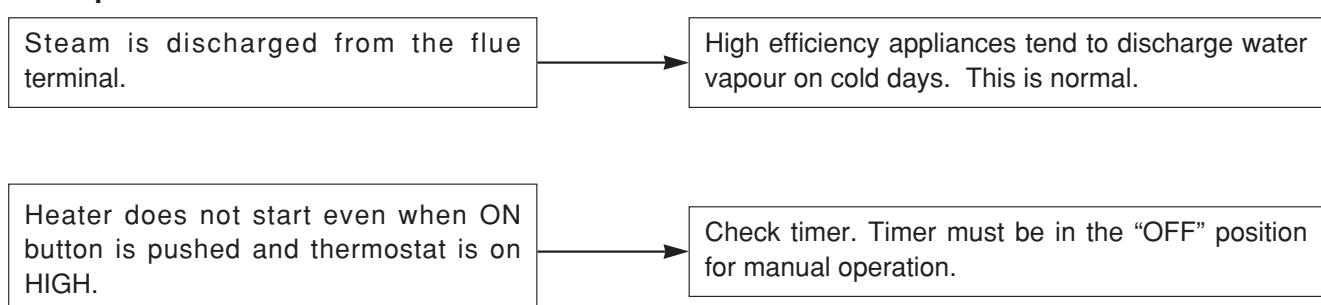
During combustion :



When the unit is turned off :



Other points :



ERROR MESSAGES

The Energysaver 1004T has the ability to check its own operation continuously. If a fault occurs, an Error Message will flash on the Digital Display of the control panel. This assists with diagnosing the fault, and may enable you to overcome a problem without a service call.
Please quote the code displayed when inquiring about service.

CODE DISPLAYED	FAULT	REMEDY
11	Missed Ignition	Check gas is turned ON. Service call if repeated.
12	Flame failure	Check gas is turned ON. Service call if repeated.
14	Overheat	Clean filter Service call if repeated.
16	Room overheat	Lower room temperature to less than 40°C.
31	Room Temperature Sensor faulty	Service call.
32		
33	Overheat Temperature Sensor faulty	Service call.
34		
49	Flue Block	Check around flue terminal
53	Sparker failure	Service call.
61	Combustion fan failure	Service call.
70	Faulty ON/OFF switch	Service call.
71	Faulty solenoids	Service call.
72	Faulty Flame Rod	Service call.
73	Communication Error	Turn heater OFF, then ON again.
99	Flue Block	Check around flue terminal

In all cases, you may be able to clear the Error Message simply by turning the heater OFF, then ON again.

If the Error Message still remains or returns on the next operation contact Rinnai UK Ltd or your Supplier and arrange for a service call.

SAFETY DEVICES

Overheat Switch:

This device automatically cuts the gas off if the heater exceeds a predetermined temperature. This is normally caused by an obstruction in front of the louvres, or a blocked fan filter.

If this switch operates, turn the unit off, remove the obstruction (clean filters) and let the unit cool off before re-operating.

Two Fusible Links

Backs up the overheat switch. If a fusible link cuts the unit off, a service call by an authorised person is required to replace the link.

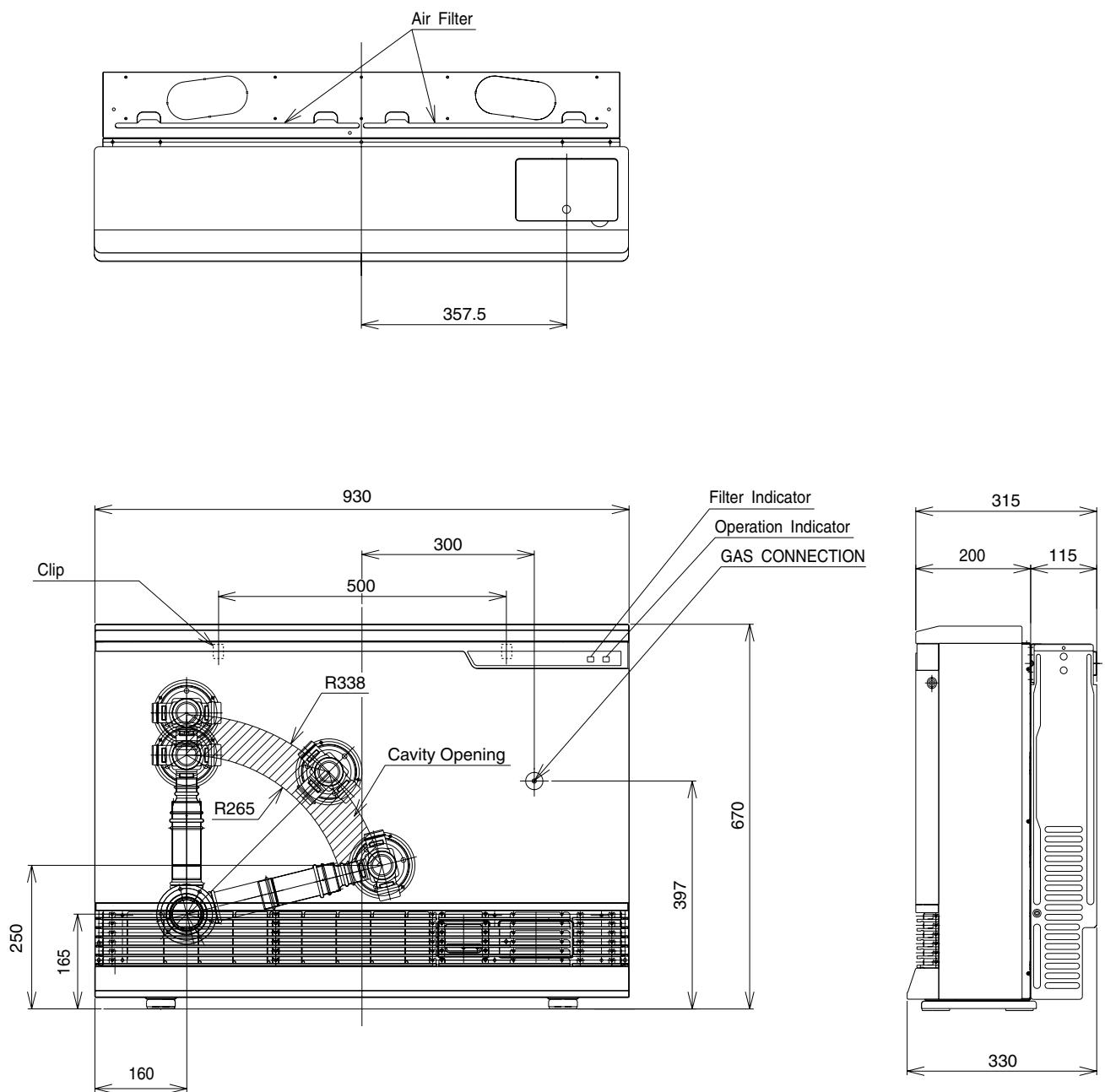
Flame Failure Device

If the flame goes out during operation this device cuts the unit off (lockout). To reset, turn the unit off, then on again.

Fan Delay

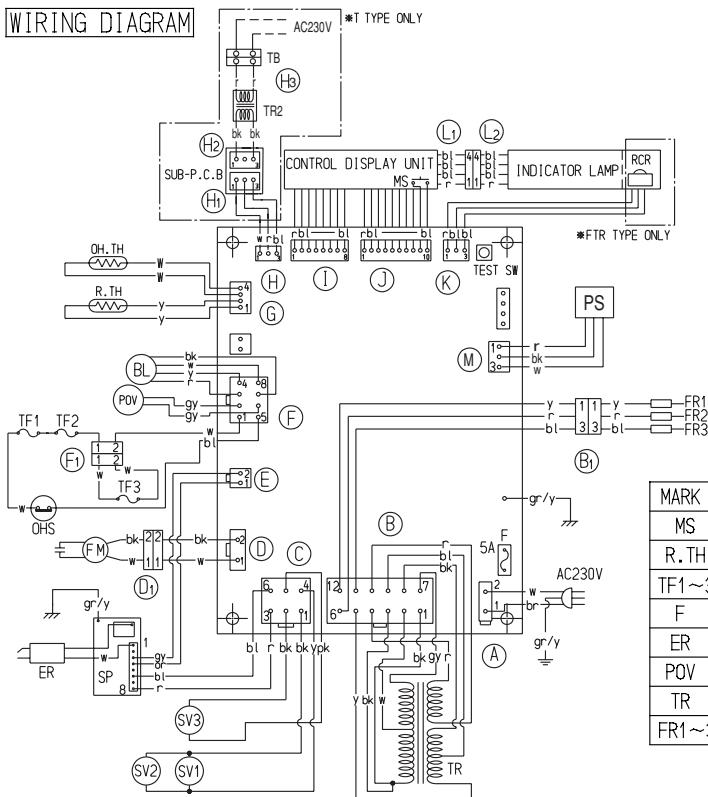
Turns the fan on and off automatically when the heat exchanger warms up and when it cools down. This helps to prevent cold draughts and maximises efficiency.

DIMENSIONS



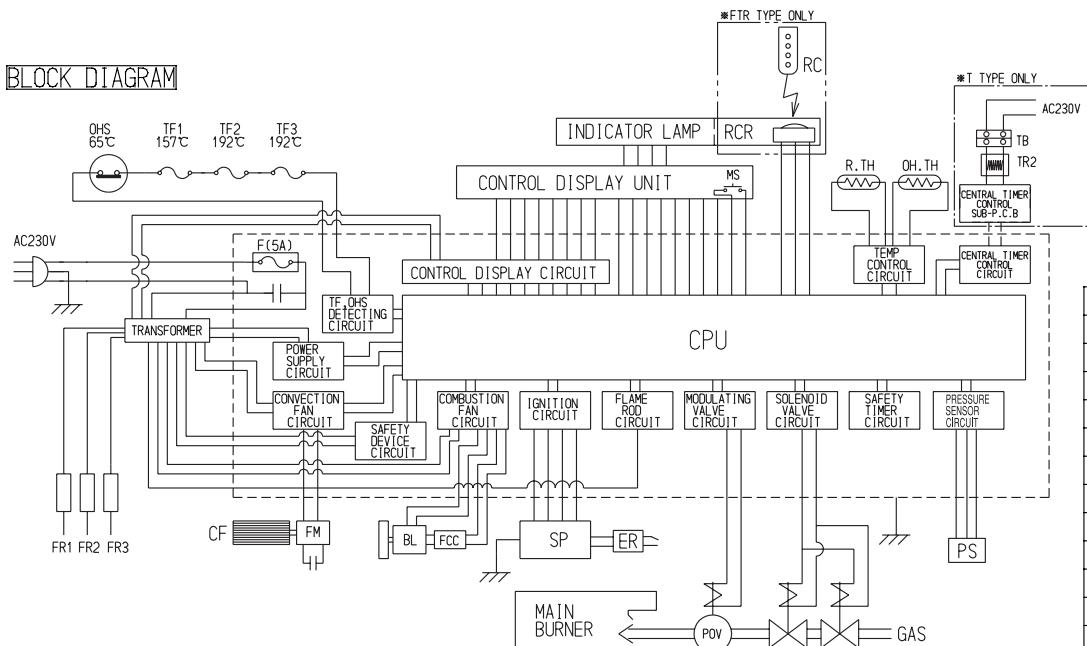
WIRING DIAGRAM

WIRING DIAGRAM



MARK	PARTS NAME	MARK	PARTS NAME
MS	MAIN SWITCH	OH.TH	OVER HEAT THERMISTOR
R.TH	THERMISTOR	OHS	OVER HEAT SWITCH
TF1~3	THERMAL FUSE	FM	CONVECTION FAN MOTOR
F	FUSE	SP	SPARKER
ER	ELECTRODE	SV1~3	MAIN SOLENOID VALVE 1~3
POV	MODULATING SOLENOID VALVE	BL	COMBUSTION FAN MOTOR
TR	TRANSFORMER		
FR1~3	FLAME ROD 1~3		

BLOCK DIAGRAM



CODE	COLOR
bk	black
bl	blue
gr	green
gr/y	green/yellow
pk	pink
r	red
w	white
y	yellow
gy	grey
or	orange
br	brown
lb	light blue

WARRANTY

As the purchaser of this high quality model RHFE-1004T product you are provided with the following warranty:

	Free Parts
Heat Exchanger	15 Years*
Fan	1 Year
All other parts	1 Year

* Full Heat Exchanger replacement (parts only) for all 15 years.

This warranty does not cover cleaning and normal wear and tear, calls of this nature may be chargeable. Please check the fault finding charts on page 32, before asking for a service call. You may be able to overcome the problem without the service call, or the heater may be operating normally. Service calls to a heater which is operating normally may be chargeable, even when the heater is under warranty.

The installer is responsible for your heater's correct installation. There is no requirement to post the following information back to **Rinnai UK Ltd.**

However we advise that you keep it in a safe place.

Date of installation:

Installer's name:

Address:

Telephone:

Licence number:

CONDITIONS

1. It is a condition of this warranty that the heater shall have been serviced annually during its lifetime by a suitably qualified service engineer and that it shall have been fitted and used in accordance with the Company's Installation and Operating instructions.
2. Failing to use genuine Rinnai spare parts may invalidate the warranty.
3. The serial number of the heater must be supplied prior to any claim being made.

SPECIFICATIONS

Description: The Rinnai 1004T, Forced Flue.
Type: Fully Automatic Space Heater.

Input:

	Natural Gas		Propane	
	High	Low	High	Low
GROSS	11.0kW	3.1kW	10.3kW	3.1kW
NET	10.54kW	2.8kW	9.64kW	2.8kW

Gas Control: Rinnai Electronic Modulating Control.
Burner: Stainless Steel, Ribbon Type.
Gas Inlet: 1 / 2 inch BSP Male Thread.
Test Point Pressure: Natural Gas: High: 8.8mbar Propane: High: 23.3mbar
Low: 4.9mbar Low: 10.7mbar
Flue: Forced Flue.
Flue Connection: Supplied with Heater.
Ignition: Electronic-Continuous Spark.
Electrical Supply: 230V, 50Hz
Fan: Centrifugal 7 Speed Fan.

Rinnai are continually updating and improving products, therefore specifications are subject to change without prior notice.

SERVICE CONTACT POINT

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